



Brainworks
A Kangaroo Kids Initiative

MEGASTRUCTURES

The bigger, the better

MEGASTRUCTURES

ANJALI KAMATH





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Great Structures

There are structures around the world – old and new – that are so big that you can hardly begin to understand how they were built.

Ancient engineering

Since time immemorial, man has been trying to use innovative methods to build houses, **temples**, monuments, **towers** and bridges. In earlier days, constructing these structures was challenging due to limited knowledge and technology. However, engineers of that time managed to come up with wonderful, time-enduring structures that still exist today. The Roman roads and the Egyptian **pyramids** are fine examples of this.

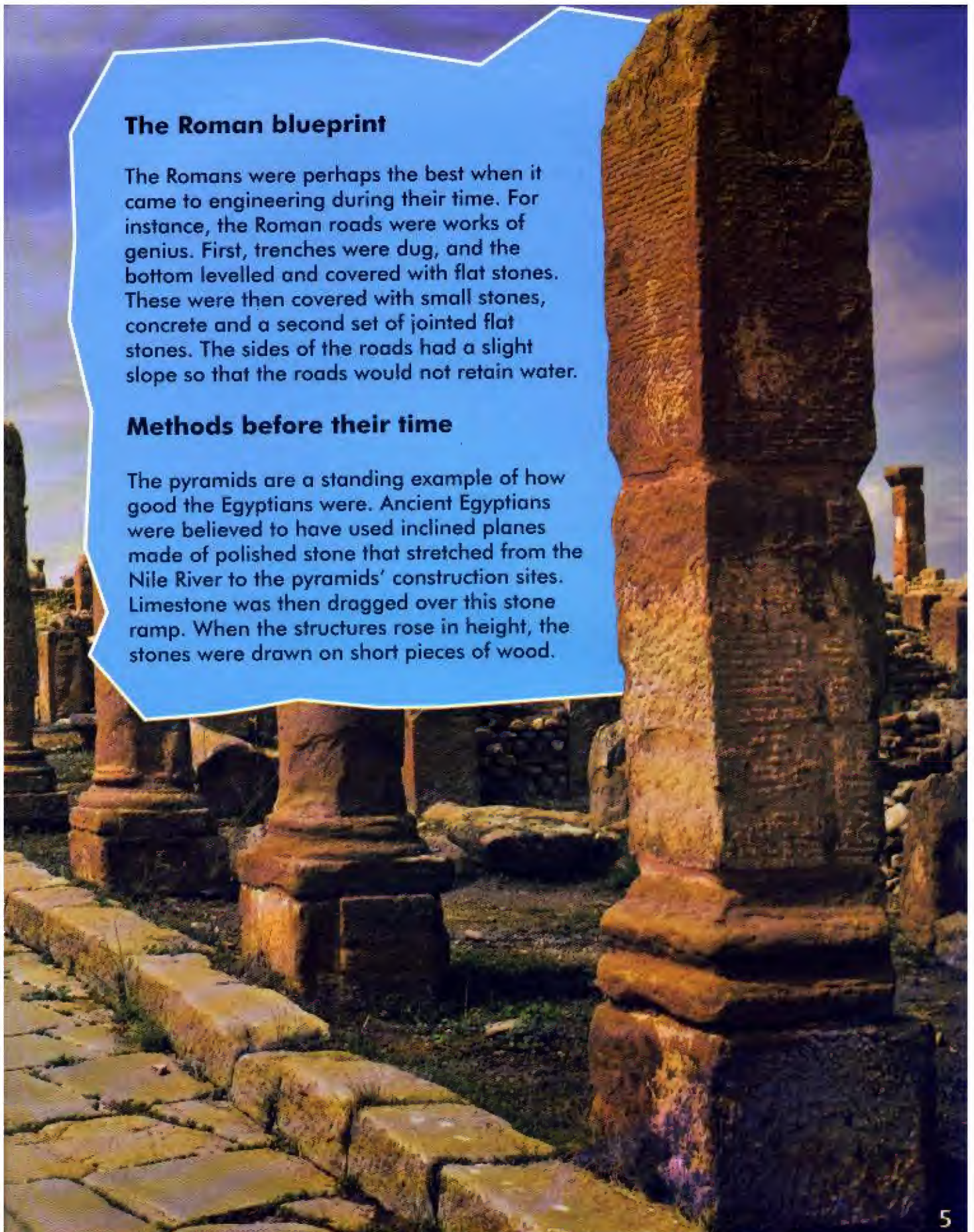
▲ Roman roads were built as straight as possible. This helped the Roman soldiers to move swiftly from one destination to another.

The Roman blueprint

The Romans were perhaps the best when it came to engineering during their time. For instance, the Roman roads were works of genius. First, trenches were dug, and the bottom levelled and covered with flat stones. These were then covered with small stones, concrete and a second set of jointed flat stones. The sides of the roads had a slight slope so that the roads would not retain water.

Methods before their time

The pyramids are a standing example of how good the Egyptians were. Ancient Egyptians were believed to have used inclined planes made of polished stone that stretched from the Nile River to the pyramids' construction sites. Limestone was then dragged over this stone ramp. When the structures rose in height, the stones were drawn on short pieces of wood.

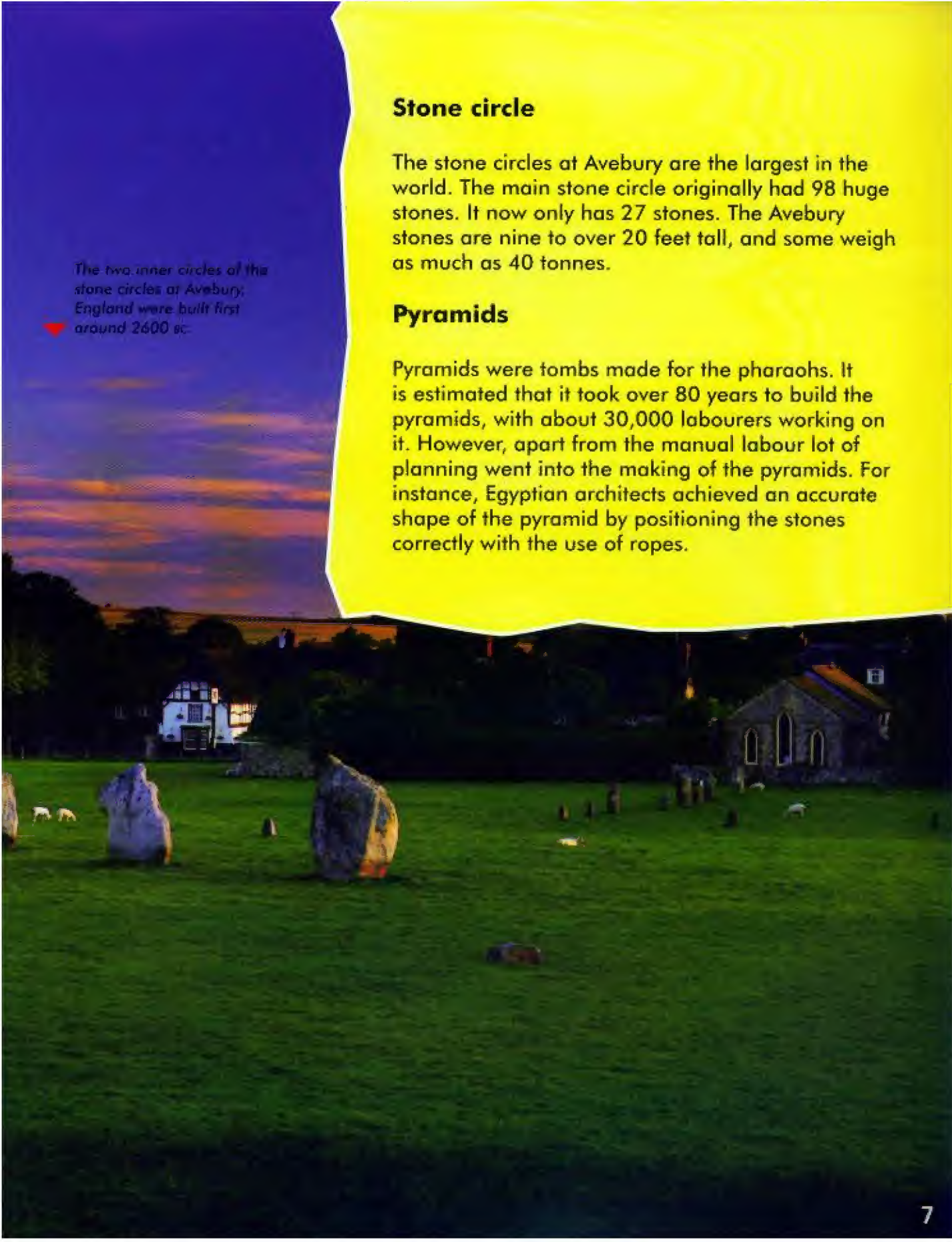


Marvels Of Stone

Stone structures are structures made entirely of stone. Some old stone structures that were built hundreds of years ago still survive to this day.

Obelisks

Obelisks are **monoliths**, or single standing stones. The pharaohs of ancient Egypt built these magnificent structures. During the rule of the Roman emperors, several obelisks were relocated to present-day Italy. In fact, 13 of the 21 monoliths that exist today are found in Italy.



The two inner circles of the stone circles at Avebury, England were built first around 2600 BC.

Stone circle

The stone circles at Avebury are the largest in the world. The main stone circle originally had 98 huge stones. It now only has 27 stones. The Avebury stones are nine to over 20 feet tall, and some weigh as much as 40 tonnes.

Pyramids

Pyramids were tombs made for the pharaohs. It is estimated that it took over 80 years to build the pyramids, with about 30,000 labourers working on it. However, apart from the manual labour lot of planning went into the making of the pyramids. For instance, Egyptian architects achieved an accurate shape of the pyramid by positioning the stones correctly with the use of ropes.

Ancient Wonders

There are buildings made thousands of years ago that are, in many ways, as magnificent as the great structures of modern times. In fact, it wouldn't be wrong to say that these old buildings paved the way for great structures that exist today.

The magnificent Hanging Gardens

Did the Hanging Gardens of Babylon actually exist? According to historians, they did. Legend has it that Nebuchadnezzar II, the Babylonian king, constructed the Hanging Gardens for his homesick wife, who was missing the greenery and mountains of her homeland. This led to the Hanging Gardens – the terraced gardens built atop stone arches.

China's Great Wall

It took over 200 years to build the Great Wall of China. The wall was not intended to be as big as it eventually turned out. The walls were independent sections built by different rulers, as a defence against the dangers of invasion. China's first Emperor, Shi Huangdi, joined the walls as a defence against the Hun invasion.

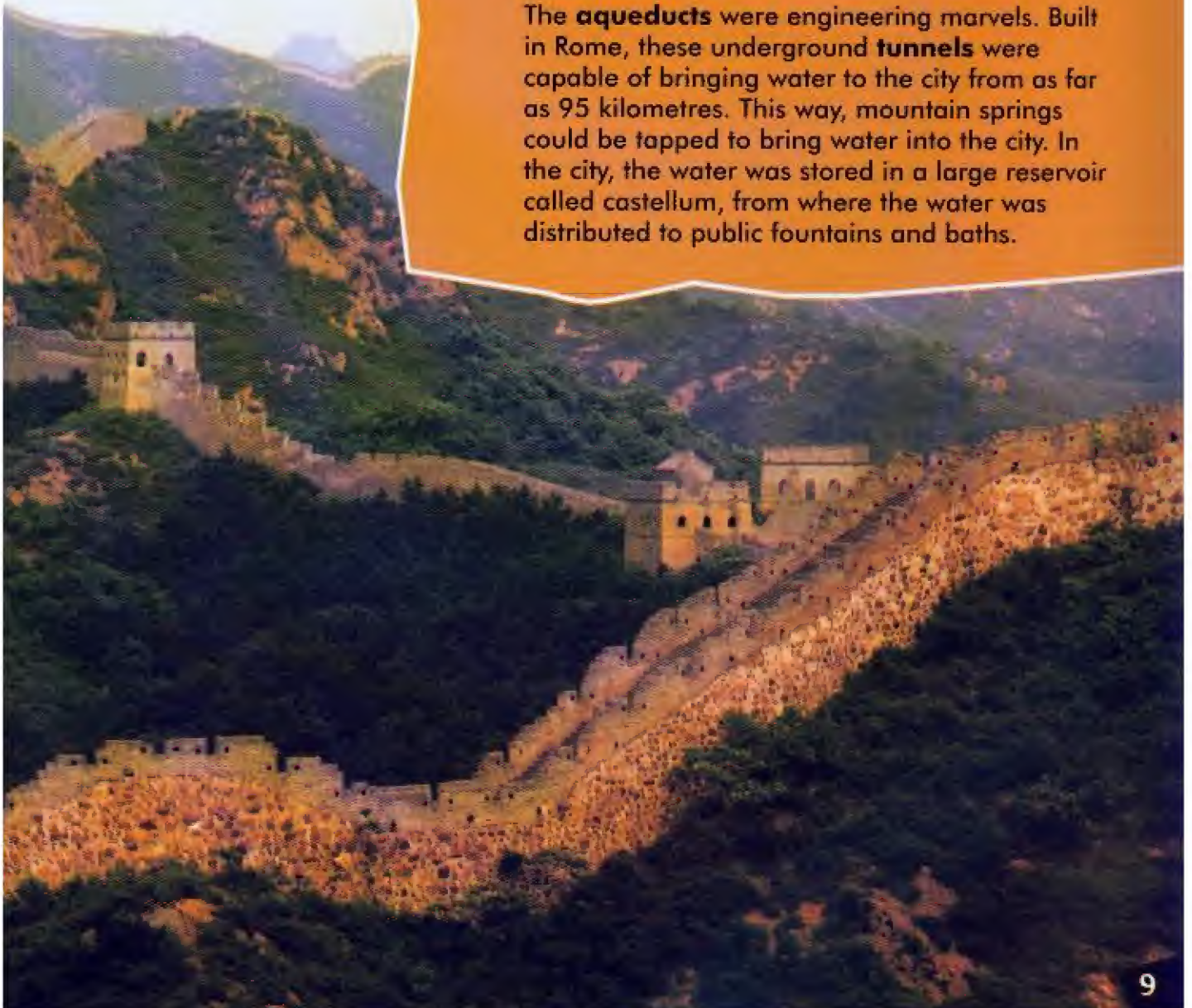
The Roman aqueducts supplied water to cities and industrial sites.

The Great Wall of China is one of the largest construction projects ever completed in the world.



Roman aqueducts

The **aqueducts** were engineering marvels. Built in Rome, these underground **tunnels** were capable of bringing water to the city from as far as 95 kilometres. This way, mountain springs could be tapped to bring water into the city. In the city, the water was stored in a large reservoir called **castellum**, from where the water was distributed to public fountains and baths.



Massive Monuments

Monuments are structures meant to commemorate a person or an event. Let us read about some of the biggest monuments in human history.



▲ Building the ziggurat was considered a religious act. The workers had to be honest men, and repeated offerings had to be made to the gods during the construction period.

Fascinating ziggurats

The **ziggurats** were constructed of mud brick with the front of the structure made of glazed brick. The base was either rectangular or square. Steps were added from the base until the structure was topped off by a temple. Mesopotamians, who built them, considered these structures as the 'stairways to heaven'. They believed that ziggurats would bring them closer to god.



*The statue stands on
a foundation that is
taller than itself!*

Liberty enlightening the world

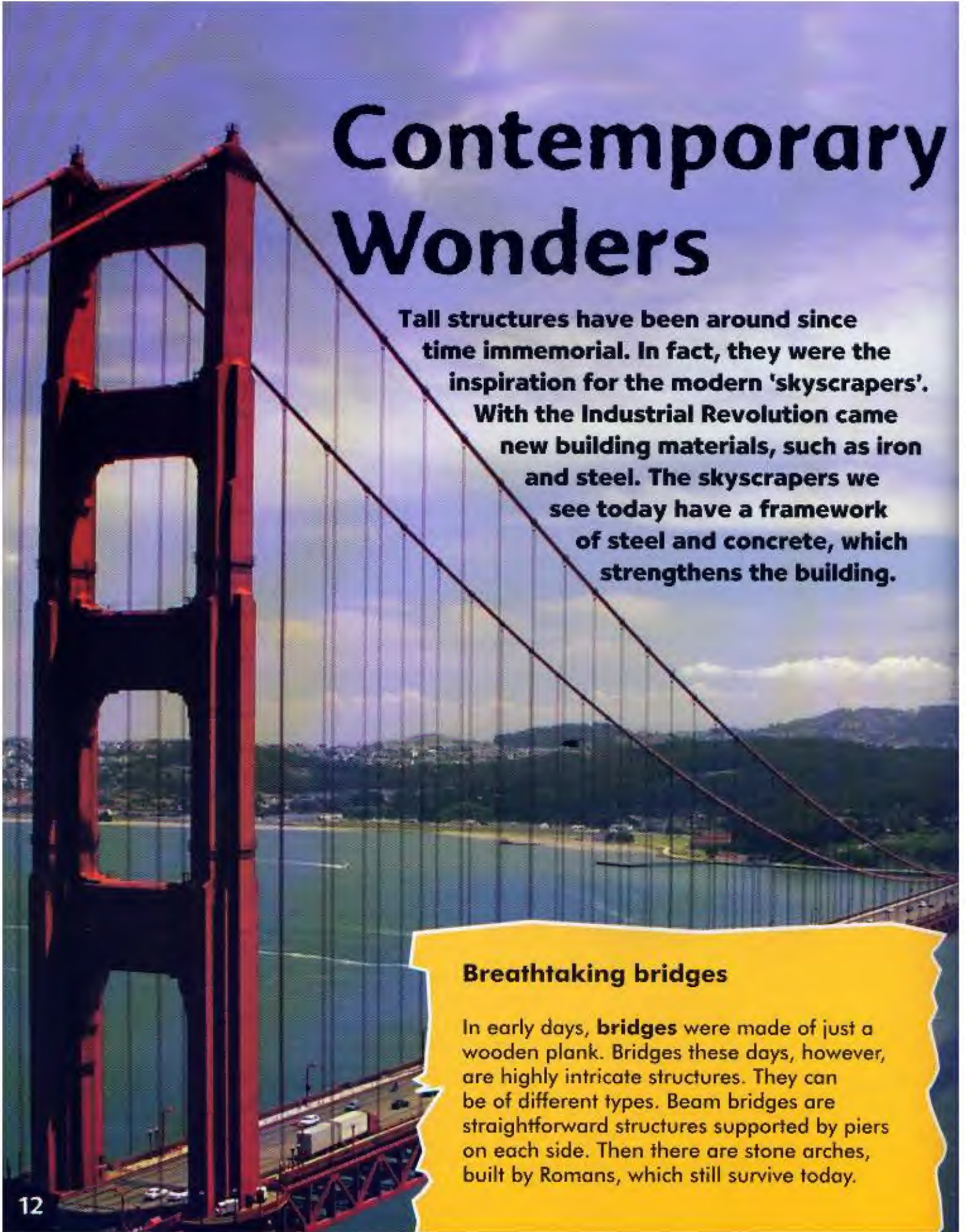
The Statue of Liberty was presented to the United States by the people of France on America's Independence day (July 4), in 1884. It symbolises friendship between the two countries that was established in the American Revolution. The 151 feet (46 m) tall statue is constructed of a sheet of pure copper. The internal structure was engineered by none other than Gustave Eiffel, the designer of the Eiffel Tower.

A-bomb dome

Hiroshima Peace Memorial, commonly known as the Atomic Bomb Dome, in Hiroshima, Japan, was built in 1915 by Czech architect Jan Letzel. The building was originally named Hiroshima Prefectural Commercial Exhibition. Thirty years later, when an atom bomb struck the city, this building was one of the few in the area to survive the total damage. Today, whatever is left of the building is viewed as a structure to commemorate the people who lost their lives on that fateful day.

*The A-bomb dome—a reminder
about the horrors of war.*





Contemporary Wonders

Tall structures have been around since time immemorial. In fact, they were the inspiration for the modern 'skyscrapers'. With the Industrial Revolution came new building materials, such as iron and steel. The skyscrapers we see today have a framework of steel and concrete, which strengthens the building.

Breathtaking bridges

In early days, **bridges** were made of just a wooden plank. Bridges these days, however, are highly intricate structures. They can be of different types. Beam bridges are straightforward structures supported by piers on each side. Then there are stone arches, built by Romans, which still survive today.

Terrific tunnels

Tunnels have had various uses over the years. In ancient times, they served as secret passages. Then Romans used them as means to transport water. In modern times, tunnels are used for human transportation. Today, when a tunnel is dug, it is lined with strong materials, and then a road or rail track is constructed. Underwater tunnels are very difficult to build. However, these days, parts of the tunnel are constructed and are later assembled under water.

Useful dams

Dams are an integral part of modern civilisation. The obvious objective of these massive structures is to prevent flooding. However, they also store water for irrigation and for producing electricity. Dams have to be very strong to survive the force of water. There are different types of dams that serve different purposes. The most powerful of these dams are gravity dams, that are capable of withstanding the force of water by the sheer weight of their structure. These dams are the most expensive to construct.

Modern bridges are built of stone, concrete, iron or steel.

Dams are massive structures built across rivers to control the flow of water.





Touching The Sky

These days, we see many buildings in the world that seem to touch the sky. These structures highlight great engineering.

◀ *Taipei 101 is specially designed to withstand natural calamities like earthquake and typhoon winds.*

Taipei 101

The Taipei Financial Centre is currently the biggest building in the world. It is also known as the Taipei 101, because it has 101 storeys! As big as the building may be, it does not take much time to reach the top from the ground floor. This building has the fastest elevators in the world that can travel at a speed of 60 km/h. The Taipei Financial Centre is also capable of withstanding strong tremors – somewhat of a necessity as it is located in an area known for earthquakes.

The Petronas Towers

Before the construction of the Taipei 101, the Petronas Towers was the biggest building in the world. The building's design is inspired by Islamic patterns and symbolises unity, harmony and stability. Both towers are 88 storeys high with a total of over 30,000 windows.



The Sears Towers

The Sears Towers in Chicago held the record for the tallest building in the world for 23 years. Architect Bruce Graham and engineer Fazlur Rahman Khan faced the challenge of building this structure in one of America's windiest cities. They came up with a design that was wide at the bottom and narrow at the top.

▲ The Sears Tower in Chicago was the tallest building for 23 years until Malaysia's Petronas Towers came up in 1996.

The Jin Mao Tower

The Jin Mao Tower in the district of Pudong, Shanghai, is the second tallest building in China. Completed in 1999, the 420.5 metres tall building is a mix of modern engineering and traditional Chinese culture. The building has everything – a 5-star hotel, office space, banquet halls, and an observation deck, among other things.

The Empire State Building

The Empire State Building is the tallest building in New York City. The construction of the building took just over a year, which is a record in itself. Empire State Building is one of the seven wonders of the modern world. It is known for having several television broadcasting stations.

The CN Tower

Canada's National Tower, also known as CN Tower, holds the record for being the tallest freestanding structure in the world. The 553.3 metres tower was built by the Canadian National Railway Company. Its main purpose is to transmit television and radio signals. In the tower you can find the SkyPod, the world's highest public-observation deck. The CN Tower also has a revolving restaurant.

The CN Tower offers a breathtaking view of downtown Toronto.





*The Burj al Arab is built
on an artificial island.*

The Burj al Arab

The Burj al Arab in the United Arab Emirates is one of the tallest hotels in the world. Built on a man-made island, the hotel is in the shape of a sail, and built in such a way that its shadow does not encroach upon the nearby beach. The 60-storey hotel is well known for its luxurious settings. It has a helipad and over 200 deluxe suites!

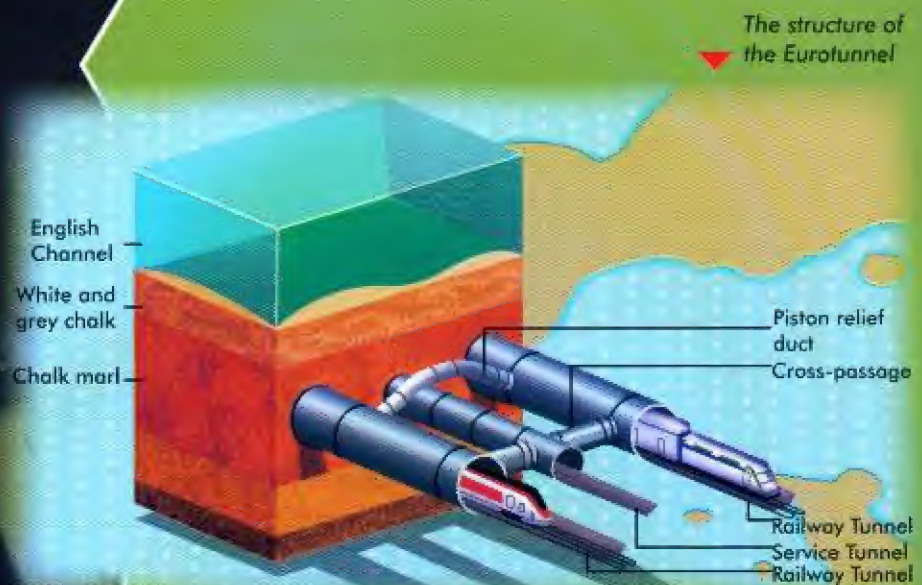
The Great Tunnels

In ancient times, tunnels were used as secret passages. However, in the past 200 years, tunnels are being used for a different purpose – as paths for different land and sea modes of transport.

The Seikan Tunnel

It took a major tragedy in 1954 for the Japanese to come up with the Seikan Tunnel. Initially, the only way past the Tsugaru Strait was through ferryboats. The tragedy in 1954, brought about by a typhoon, took 1400 lives. That was when talks of building an underwater tunnel started. However, this was not an easy task. The unstable volcanic rock made it impossible to use tunnel-boring machines. So the Japanese used a more direct method – they blasted through the rocks!

▲ The construction of the underwater Seikan Tunnel involved 3,000 workers at one time.



The Eurotunnel

The Eurotunnel comprises of two tunnels with a service tunnel in between. It was constructed beneath the English Channel. Such attempts to link France and England had been made previously, in 1880. The British prime minister, fearing a French invasion, had rejected the offer. About hundred years later, in 1994, the tunnel opened. Today, the Eurotunnel has greatly enhanced French and British relations, and is one of the longest rain tunnels in the world.

The Laerdal Tunnel

The Laerdal Tunnel in Norway is the longest road tunnel in the world. The tunnel, which cuts through the Alpine mountains, provides a shorter and safer route between the cities of Oslo and Bergen. This tunnel is high on safety. It has three mountain caverns that are designed in such a way that vehicles can turn back in case of a fire. There are also special lighting systems that keep drivers awake.

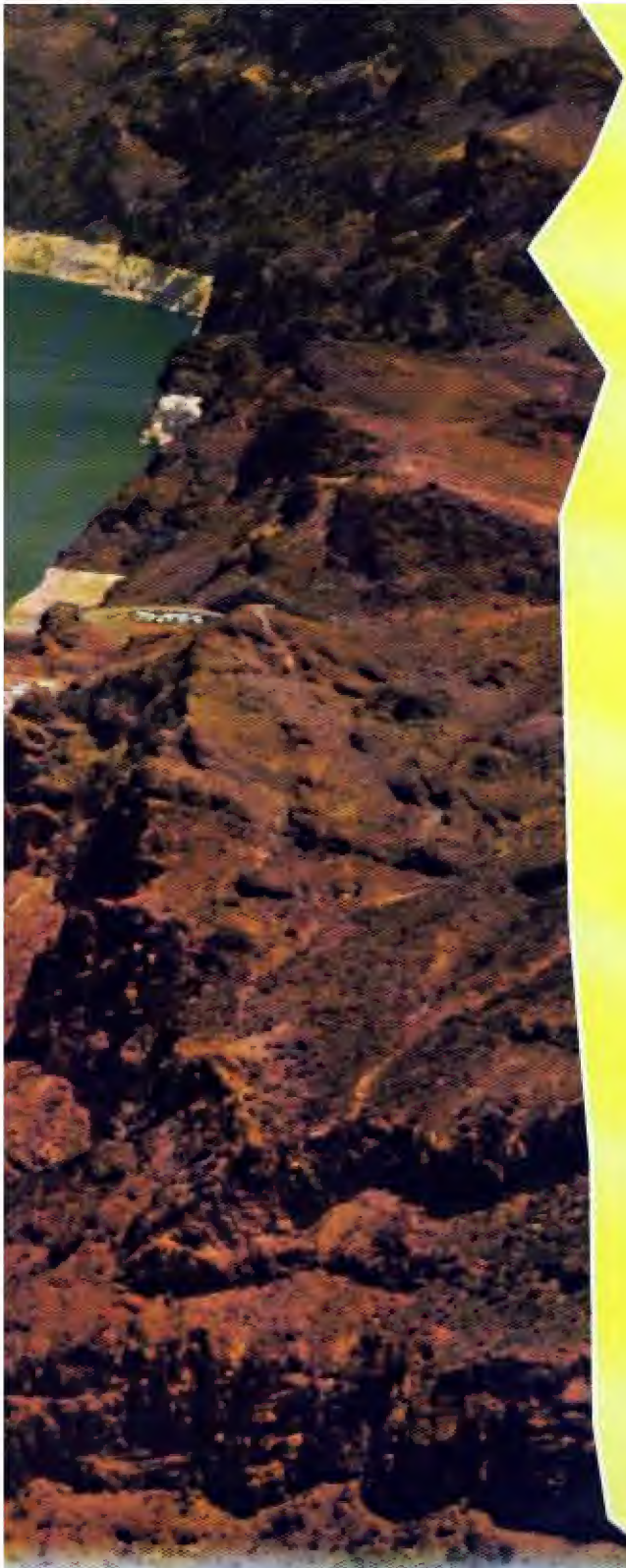
All-Purpose Dams

Dams have many purposes. Initially, they were built as safety measures against the dangers of flooding. Today, they are used for different roles, like irrigation and producing electricity.

The construction work of the Hoover Dam started in 1931 and was completed in 1935—two years ahead of schedule.

The Hoover Dam

When work started on the Hoover Dam in 1931, it was not certain whether the wild Colorado River could actually be tamed. Workers had to blast massive tunnels through the walls to divert the river. Once the blasts were over, workers toiled for five years to complete the project. However, the construction of one of the biggest dams of U.S. was not without its share of problems. It is estimated that 112 people died during the making of the dam.



The Grand Coulee

The Grand Coulee was set up for irrigation purposes in the dry western part of the U.S. However, it was used for producing electricity during World War II. After the war ended, the dam was once again used for irrigation. Today, the Grand Coulee is the largest hydroelectric dam in the U.S.

The Three Gorges Dam

The overflowing rivers Hwang Ho and Yangtze have haunted China for hundreds of years. The Chinese government is doing something about this. Construction of a dam is underway in the Yangtze River. The Three Gorges Dam, as the dam will be called, will control flooding.

The Itaipu Dam

The Itaipu Dam situated on the border of Brazil and Paraguay houses the world's largest hydroelectric power plant. Constructed on the Paraná River, it took 18 years to complete the dam. The first three years of the project were spent in removing about 50 million tonnes of earth, for the diversion channel. Finally the workers dug a channel measuring 2 kilometres long, 149 metres wide and 91 metres deep.

Itaipu Dam is located on the Paraná River at the Brazil/Paraguay border. It is the world's largest hydroelectric power facility.



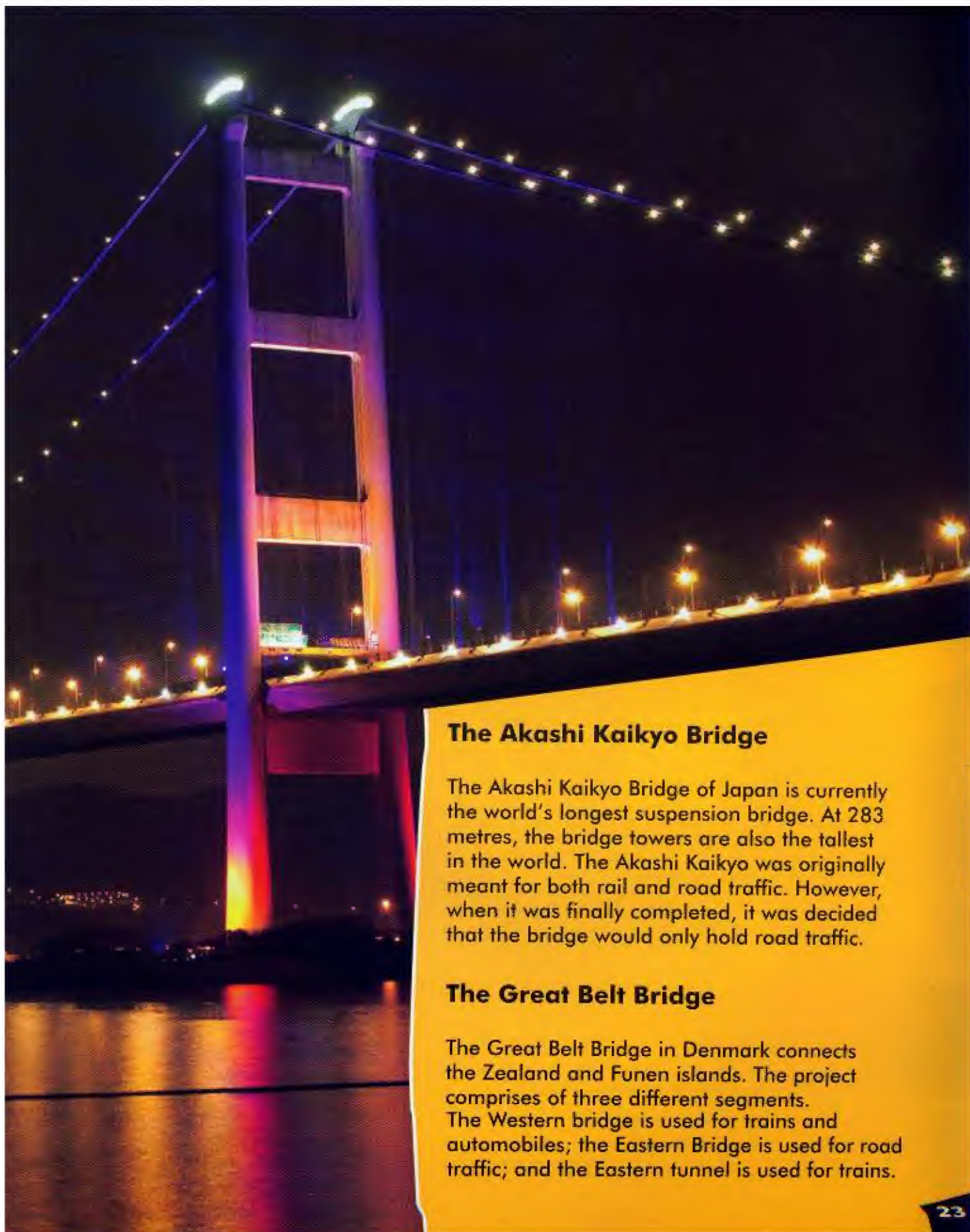
Super Bridges

Once upon a time, a bridge was just a piece of wooden plank. These days there are bridges big enough to allow man to cross over big seas, let alone a small stream.

The Tsing Ma Bridge

Hong Kong's Tsing Ma Bridge is one of the longest **suspension bridges** in the world carrying both trains and cars. The upper level of the 1,377-metre bridge has six lanes for vehicles, while the lower level has two train tracks.

The Tsing Ma bridge situated in Hong Kong stretches upto 1,377 metres, and has both road and railway tracks.



The Akashi Kaikyo Bridge

The Akashi Kaikyo Bridge of Japan is currently the world's longest suspension bridge. At 283 metres, the bridge towers are also the tallest in the world. The Akashi Kaikyo was originally meant for both rail and road traffic. However, when it was finally completed, it was decided that the bridge would only hold road traffic.

The Great Belt Bridge

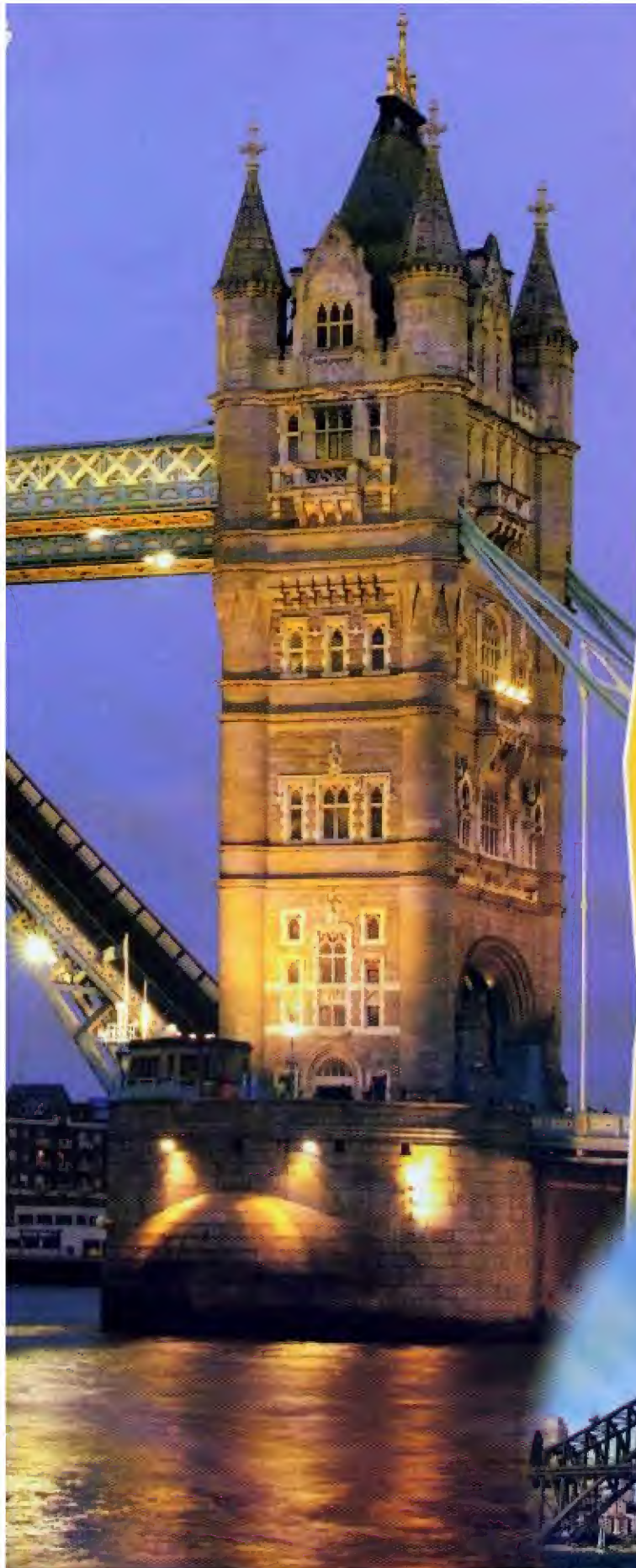
The Great Belt Bridge in Denmark connects the Zealand and Funen islands. The project comprises of three different segments. The Western bridge is used for trains and automobiles; the Eastern Bridge is used for road traffic; and the Eastern tunnel is used for trains.

The Tower Bridge

With the city of London growing rapidly in the 1800s, a bridge became a necessity. This resulted in the Tower Bridge of London over the river Thames. The Tower Bridge's unique feature is that it can be raised to allow ships to pass through. And it takes less than a minute to move the roadways, also called bascules.

The Tower bridge has a pair of glass-covered pedestrian walkways, between its twin towers.





The Golden Gate Bridge

San Francisco's Golden Gate Bridge is one of the world's longest suspension bridges. Completed in 1937, the bridge is unique for its time. The bridge was designed to withstand fog, tide and strong winds that were characteristics of the weather in that region. It is believed that over a million tonnes of concrete was used to build the bridge's anchorages.

The Sydney Harbour Bridge

Australia's Sydney Harbour Bridge is the world's largest steel-arch bridge. The top of the bridge is 134 metres above the harbour. The road on the Sydney Harbour Bridge is known as the Bradfield Highway. The bridge has eight lanes dedicated to road traffic and two railway tracks.

Apart from the road and railway tracks, the Sydney Harbour bridge even has a bicycle lane.



Super Stadiums


Stadiums, these days, provide spectators with a lot of comfort. These huge structures are more than just a place to sit and watch a game.

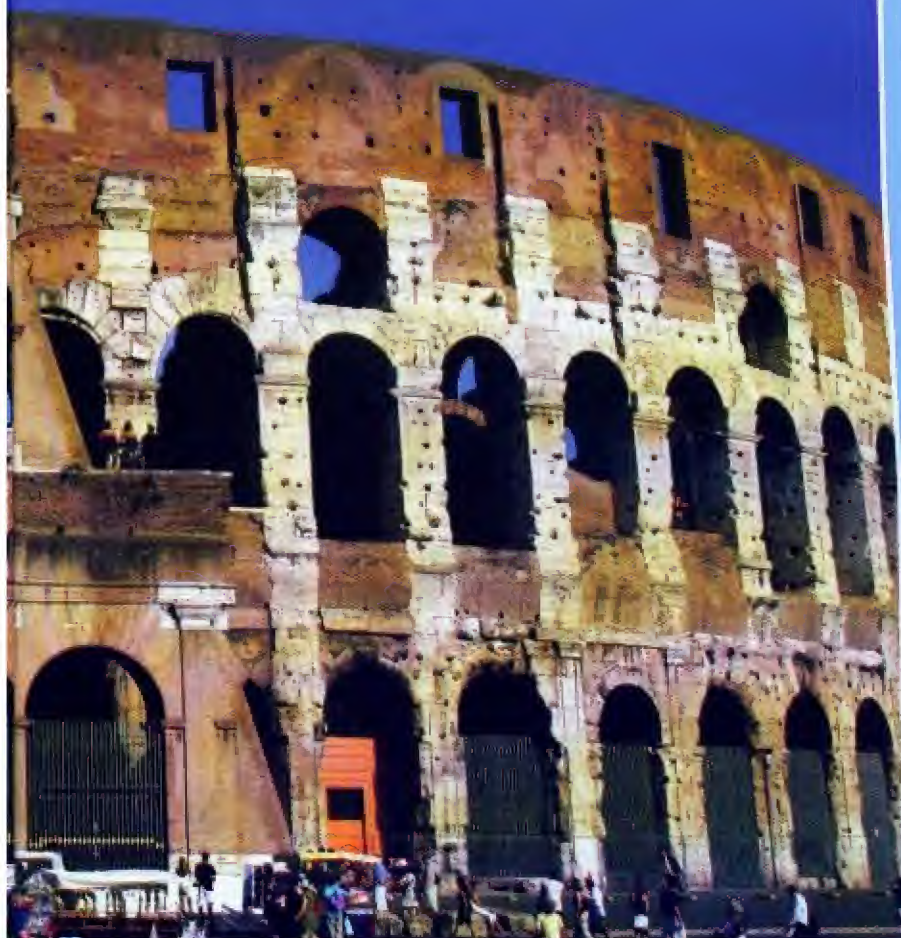
The Great Colosseum

Would modern stadiums be as good as they are if not for the **Colosseum**? Perhaps not. For its time, the Colosseum was a masterpiece of engineering. Capable of holding 50,000 people, the venue mostly hosted gladiator games. It had a unique cooling system, where the canvas roof would slope towards the middle, providing breeze to the spectators on hot days.

▲ The Colosseum was built about 2000 years ago in Rome.



 The Maracana stadium has two large rings of tiers around the entire playing field.



The magnificent Maracana

In 1950 Brazil was chosen to host the football World Cup. It was a big occasion as the tournament was being held for the first time after World War II. To mark the event, the Brazilian government built the Maracana stadium, with a stadium capacity of nearly 200,000.

The Rungrado May First Stadium

The Rungrado May First Stadium in North Korea is currently the second largest multi-purpose stadium in the world. It has a seating capacity of nearly 150,000. The 60 metres high stadium has a total of eight floors. The 16 arch roofs are arranged like petals on a flower.

The Home of Football

The Wembley stadium is also known as the home of football. It was here that, in 1966, England won its first and only football World Cup. Recently, the famous stadium underwent a much-needed renovation. The new Wembley stadium is big enough to house 90,000 spectators. What's more, the stadium has a sliding roof, which many claim to be the longest single-span roof in the world.

Great Ships

Ships are like islands floating on the sea. They may have served different purposes, but all of them have one common factor – they are massive!

There is no need to refuel USS Ronald Reagan for another 20 years. This is because it uses nuclear energy.

The Japanese sea monsters

The Yamato and Musashi were the biggest battleships ever constructed. They both played a vital role for Japan during the World War II. The Americans used a combined total of over 30 bombs and torpedoes to sink the two battleships.

USS Ronald Reagan

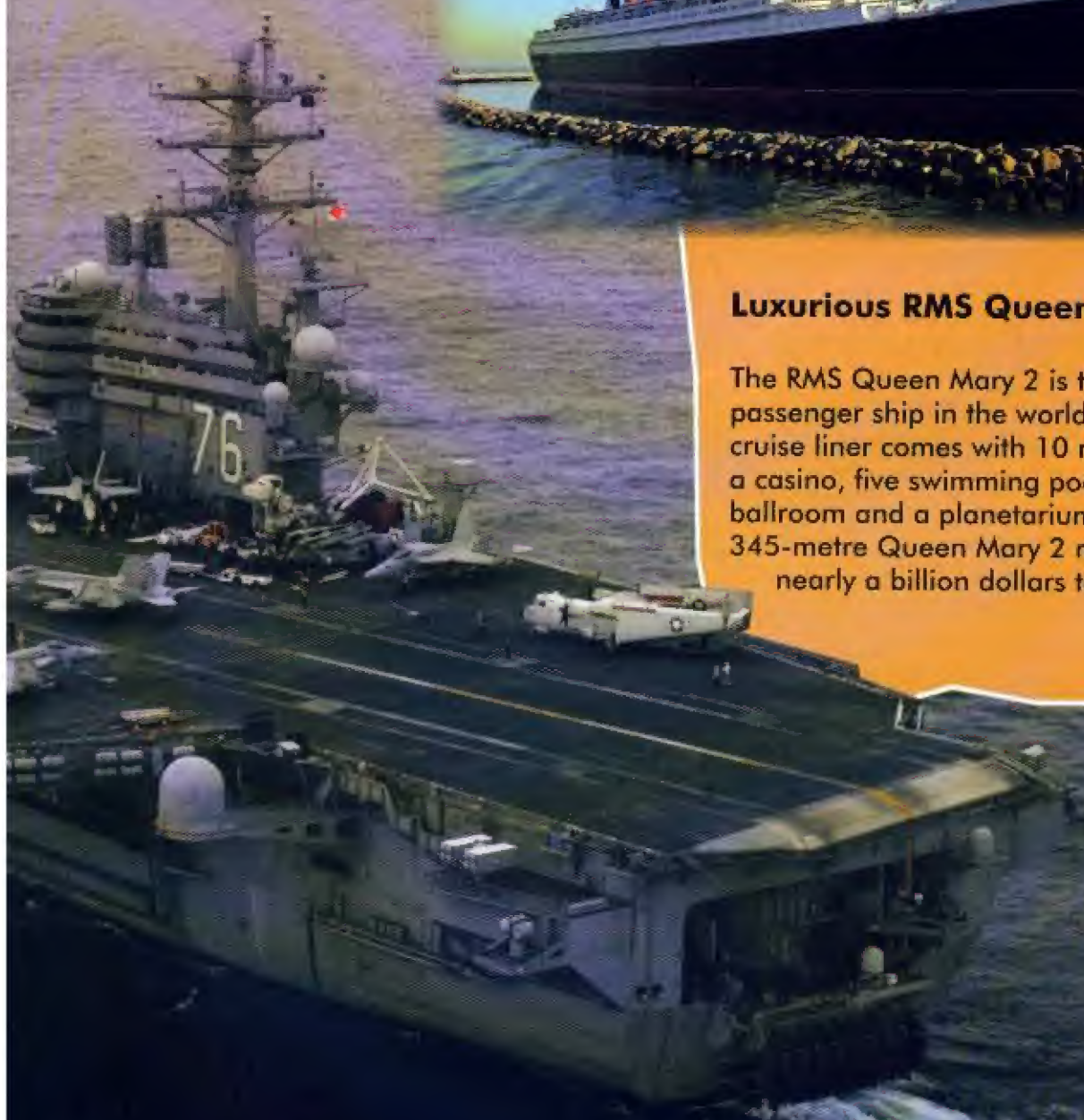
USS Ronald Reagan is a vessel run by nuclear energy. It is capable of carrying more than 80 combat aircraft! It can also house 6,000 naval staff.

The RMS Queen Mary 2 is
nothing short of a luxurious
island floating on the sea!



Luxurious RMS Queen Mary 2

The RMS Queen Mary 2 is the biggest passenger ship in the world. The cruise liner comes with 10 restaurants, a casino, five swimming pools, a ballroom and a planetarium. The 345-metre Queen Mary 2 required nearly a billion dollars to construct.



Monsters Of The Air

Some of the aircraft that have been produced in history have been so big that you find yourself wondering: how could they fly in air?

The Green Giant

The Airbus A380 is the largest passenger-carrying aircraft in the world. It is environment-friendly and is often called the 'green giant'. The gigantic A380 consumes lesser fuel than other planes. It is capable of carrying a minimum of 555 passengers. The Airbus A380 is twice as long as a full-grown adult whale!

The MI-26

The Russian company MIL specialises in building huge, cargo-carrying aircraft. The same company has the distinction of owning the world's biggest helicopter, the MI-26. The helicopter is currently also the most popular heavy-lift helicopter in the world, and the first to have eight blades in its main rotor. Developed primarily for military purposes, the MI-26 is now being produced for public service as well.



▲ The MI-26 is the biggest helicopter in the world.



LZ-129 Hindenburg

The zeppelin LZ-129 Hindenburg of Germany was of monstrous size. However, it could only carry a little over 130 passengers, including the crew. The aircraft met with a sad end on May 6, 1937, when it exploded upon landing at the Lakehurst Naval Air Station. There is good news though. It is believed that German engineers are working on a different model that will carry twice the number of people than the original version.

Road Giants

When cars were first produced, they were only meant for conveyance. These days, there are several vehicles of great size – some that have a purpose and some that are built just for fun!

The one unique feature of a B12M bus is the driver's seat. It is located in the middle to give the driver a better view of the road and greater comfort.

B12M buses

How about riding in buses that can carry the same number of passengers as some medium-sized planes? Well, there are such buses available in Brazil these days. They are called Volvo buses, and the longest of them measures 28.6 metres.

The Bigfoot 5

Monster trucks are the bigger version of pick-up trucks. They are also used in races. Bob Chandler of St Louis, U.S., is a specialist at making these gigantic trucks. The largest of Chandler's Bigfoot trucks, the Bigfoot 5, is truly a monster. The truck is nearly 5 metres tall, weighs about 12,700 kilograms, and has tyres that are 10 feet in diameter.

The world's biggest luxury car

The world's longest car is 30.5 metres long. It has a total of 26 wheels! Designed by American Jay Ohrberg, this limousine comes with many luxuries, including a swimming pool and a king-sized waterbed. The limousine, which is frequently used in films, is capable of bending in the middle.

The really 'Big' Toe

Imagine riding a motorcycle that is 2.3 metres tall and 5 metres long. The Bigtoe is that big! It took six years for Tom Wiberg of Sweden to build this giant motorcycle.

The Bigtoe motorcycle weighs an unbelievable 1,845 kilograms, and comes with a CD system.



Biggest On The Railway Tracks

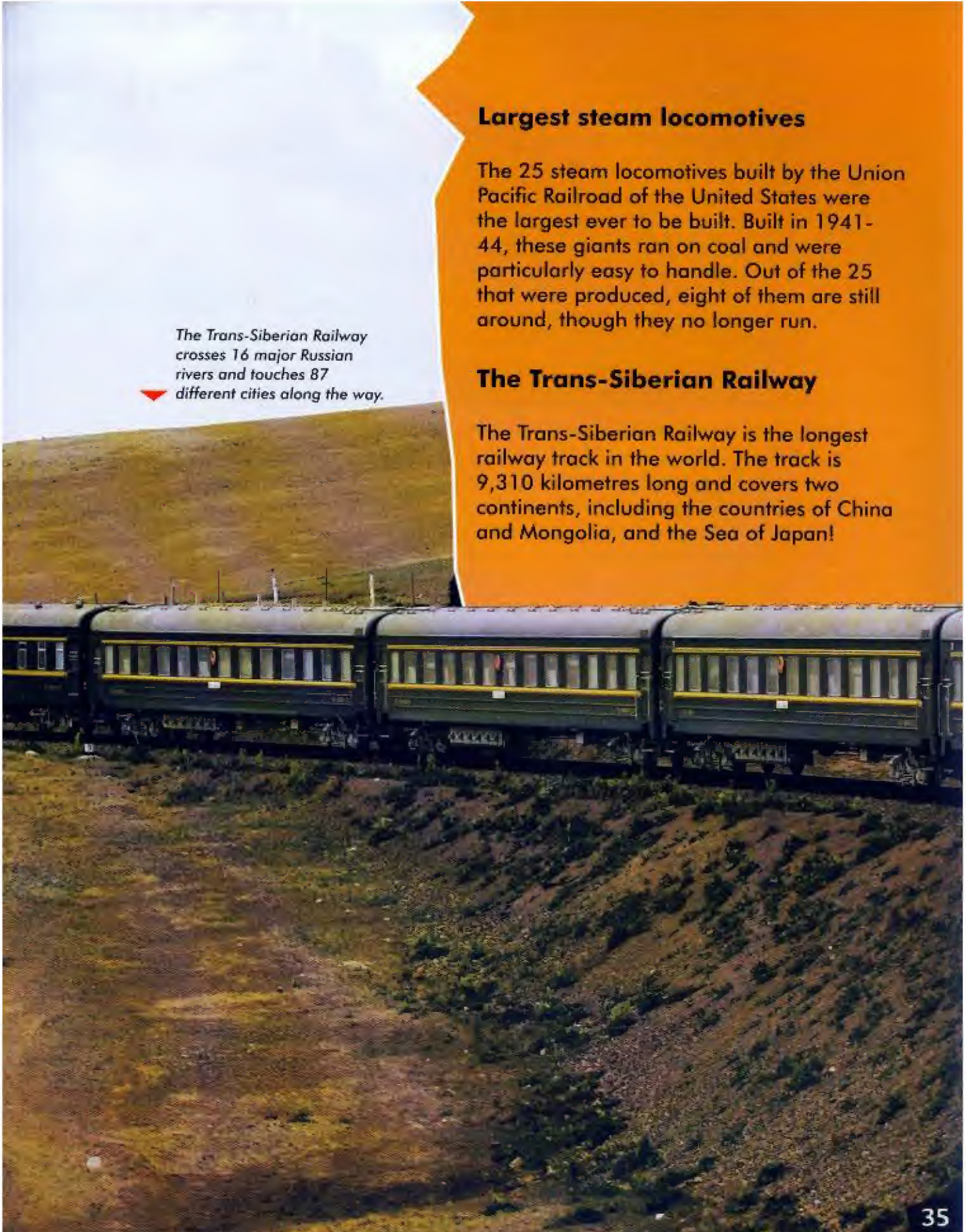
Trains and railway tracks are important. Before the advent of the aeroplane, trains were the fastest and the most convenient modes of transport.

The longest train in the world

The Australian company BHP Billiton Iron Ore owns the longest train in the world. This train that contains 682 carriages weighs 99,732 tonnes and is 7.3 kilometres in length! This freight train is not only the longest in the world but the heaviest as well.

This train is longer than some small towns!!





*The Trans-Siberian Railway
crosses 16 major Russian
rivers and touches 87
different cities along the way.*

Largest steam locomotives

The 25 steam locomotives built by the Union Pacific Railroad of the United States were the largest ever to be built. Built in 1941-44, these giants ran on coal and were particularly easy to handle. Out of the 25 that were produced, eight of them are still around, though they no longer run.

The Trans-Siberian Railway

The Trans-Siberian Railway is the longest railway track in the world. The track is 9,310 kilometres long and covers two continents, including the countries of China and Mongolia, and the Sea of Japan!

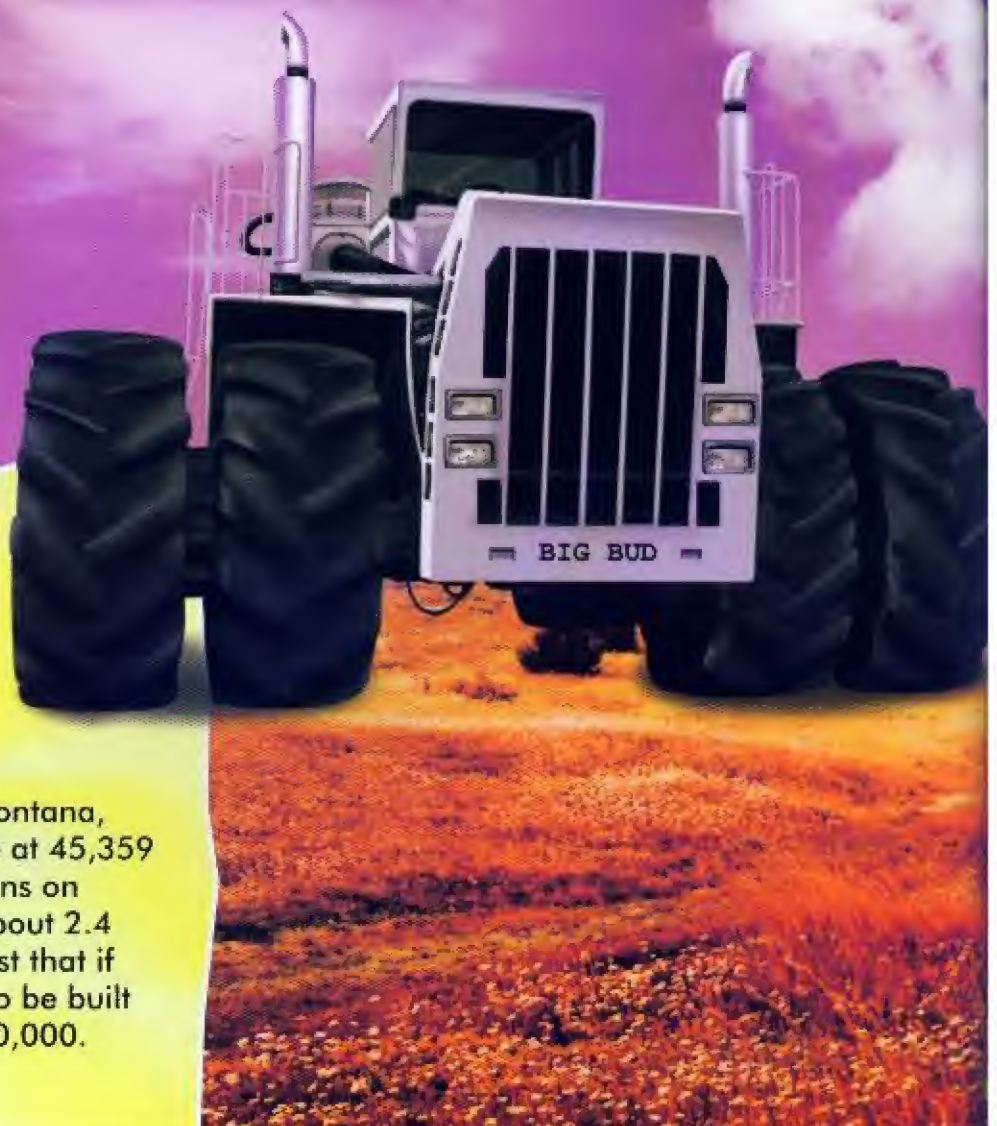
Mammoth Machines

Machines have made our lives easier, and we tend to take them for granted. However, there are some machines that are so big that they simply cannot be ignored.

If it were to be built today, this massive machine would cost a fortune.

Largest tractor

The Big Bud 16V-747 is the biggest tractor in the world. Built in 1977 by Big Bud Tractors Incorporated of Havre, Montana, this monster tips the scale at 45,359 kilograms. The Big Bud runs on eight tyres; each tyre is about 2.4 metres tall. Experts suggest that if the same machine were to be built today, it would cost \$6000,000.





Big Muskie

The Big Muskie is the biggest single-bucket digger in history. Built by Bucyrus-Erie, an American company, the 68-metre tall Big Muskie was dismantled in 1999. The dragline's bucket was big enough to fit 10 cars. The digger's excavator weighed as much as a total of 150 jetliners.

Komatsu D575A

The Komatsu D575A is the most powerful bulldozer in the world. This monster can move weights in excess of 200,000 kilograms. It can cut through limestone as easily as a shovel can go through sand. However, there is a slight problem. Because of its size, the Komatsu D575A has to be dismantled into seven or eight different parts and put into trucks to be moved about.


The Big Muskie was once among the seven engineering wonders of the world.

This monstrous machine can move just about anything!



Other Super Structures

There are structures around the world so big and magnificent that each one takes your breath away. These amazing modern wonders are not just big; most of them make our world a better place.



The Millennium Dome was initially used for exhibitions. It was later auctioned off to a company, which turned it into a centre for sports and entertainment.

London's Millennium Dome

The Millennium Dome in London was constructed to celebrate the start of the third millennium. However, the Millennium Dome, for all its magnificence, did not quite get the response that it was looking for from the public.

The Hong Kong Airport terminal building is one of the largest passenger terminal buildings in the world and operates twenty-four hours a day.



The Hong Kong Airport terminal

The Hong Kong International Airport has the distinction of having one of the largest airport buildings in the world. The baggage area is big enough to hold five jumbo jets!! About 45 million people use this terminal every year. The airport is also the third busiest in the world in terms of passenger activity.

The U.S. Interstate Highway

The Interstate Highway System is believed to be the largest public works program in history. The Interstate program connects all the major cities in the country, as well as other smaller areas. This highway is inspired by the German autobahn system, a somewhat similar road network that was first built in Berlin, Germany, in 1921.

The Suez Canal

At 163 kilometres, the Suez Canal is a modern wonder of the world. The canal connects the Red Sea and the Mediterranean Sea, and offers a much shorter route to Asia. The Suez Canal was first used in 1867. Today, about 25,000 ships pass through the canal every year.

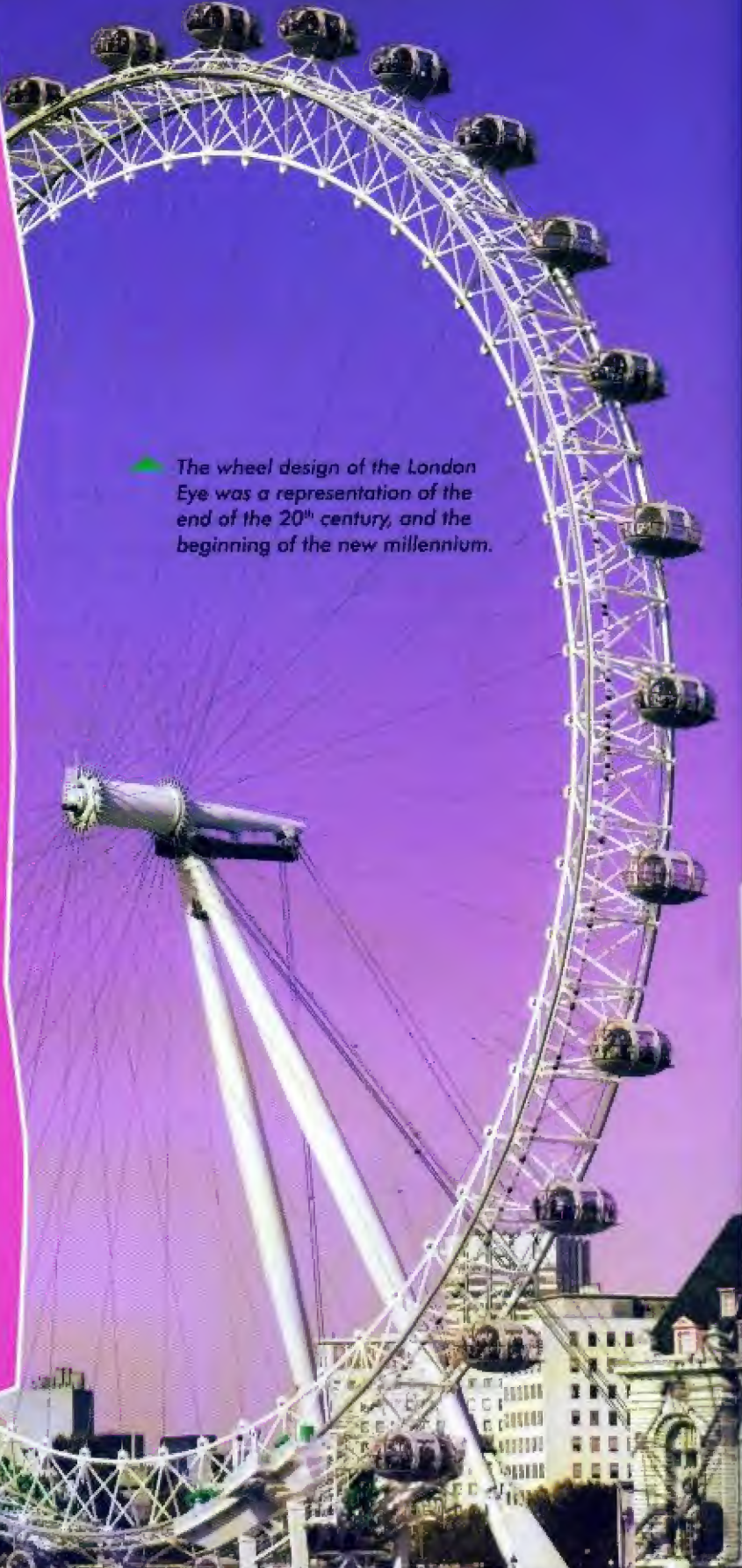


The Eye of London


The London Eye was part of the same project as the Millennium Dome. Unlike the Millennium Dome, the public received this project with much more warmth. The structure's observation wheel is the biggest of its kind in the world. The London Eye, also called the Millennium Wheel, has 32 passenger capsules that give a view of the city. The capsules rotate slowly, taking a full hour to complete one revolution.

The Smithsonian Institution

The Smithsonian Institution in Washington D.C., U.S., is the world's largest museum complex. It has the National Zoological Park, 19 museums, and nine research centres. The massive estate's owner, British scientist James Smithson, had stated in his will that, in the event of his nephew dying without any heir, the United States should use the estate to spread knowledge among the people. As it happened, Smithson's nephew died without an heir, and the Smithsonian Institution was established in 1846.



The wheel design of the London Eye was a representation of the end of the 20th century, and the beginning of the new millennium.



With 17 roller coasters, Cedar Point has the maximum number of roller coasters in the world.

Cedar Point

Cedar Point in Cleveland, Ohio, U.S., is the world's largest amusement park. Opened in 1870, the park has 68 amusement rides, including 17 roller coasters. Cedar Point was initially used as a bathhouse facility, and only later converted into an amusement park. Most of the roller coasters at Cedar Point are record setters. The Millennium Force, for example, was the first roller coaster to touch 300 feet (91 metres).

Facts At A Glance

- The Karl Marx Hof in Vienna, Austria, is the longest residential building in the world. It has a length of over one kilometre!
- The biggest Presidential residence in the world is in India. The floor area of the Rashtrapati Bhavan is about 19,000 square metres.
- Romania has the distinction of having the biggest Parliament building in the world, which is about 330,000 square metres.
- The biggest mall in the world is in Dongguan, China. It covers an area of 890,000 square metres.
- The Dubai International Airport's Terminal 3 is the biggest airport terminal building in the world, covering an area of 1,500,000 square metres.
- Boeing's factory in Everett, Washington, United States is currently the world's largest building by volume, with an area of 13,300,000 cube metres. It covers a land area of 98.3 acres.
- The Great Barrier Reef is the biggest natural structure in the world, stretching 2,600 kilometres and covering 900 islands.



Test Your Knowledge

Do you know where these structures are located?

Hanging Gardens

a) Babylon b) China c) Rome

Stone Circles

a) Egypt b) Italy c) Avebury

Ziggurats

a) Alexandria b) Yokohama c) Mesopotamia

The Petronas Towers

a) Tokyo b) Beijing c) Kuala Lumpur

The Empire State Building

a) New York b) Toronto c) Chicago

Seikan Tunnel

a) Japan b) China c) Korea

The Three Gorges Dam

a) China b) Paraguay c) United States of America

The Golden Gate Bridge

a) Sydney b) San Francisco c) Paris

Millennium Dome

a) London b) Colorado c) Los Angeles

Match the following:

1	Rungrado May First Stadium
2	Hoover Dam
3	Lupu Bridge
4	Colosseum
5	Burj al Arab

a	Shanghai
b	Rome
c	North Korea
d	Colorado
e	United Arab Emirates





Glossary

aqueduct: artificial channel built to transfer water from one place to another

bridge: structure that allows vehicles and people to cross a body of water

Colosseum: large amphitheater in Rome

dam: barrier built to contain flow of water

monolith: single great stone

monument: structure built to commemorate a person or an event

pyramid: large monument with square base and four triangular sides

skyscraper : very tall building

suspension bridge: bridge supported by cables that are anchored on both sides

temple: place of worship

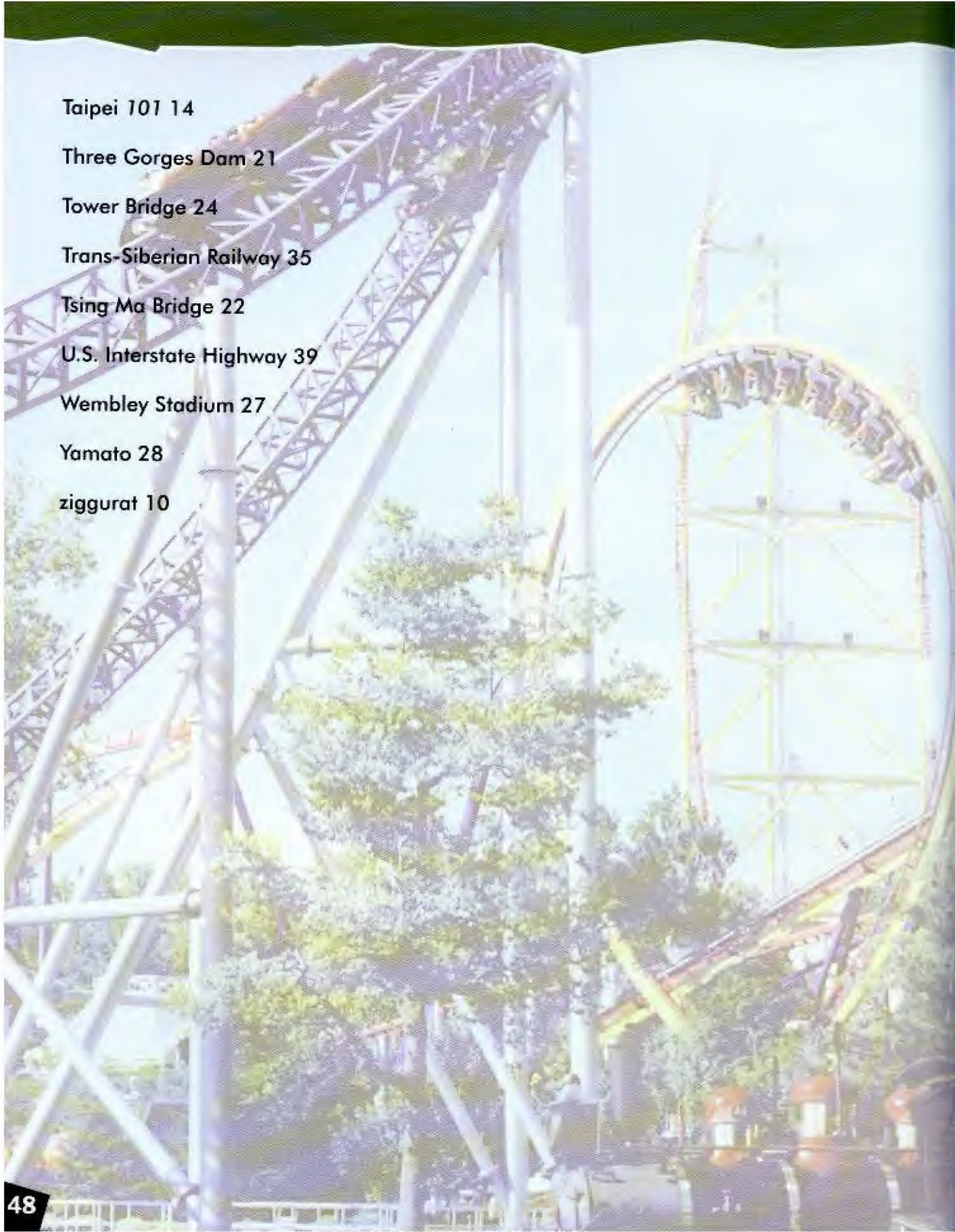
tower: structure taller than its diameter that is attached to a bigger building, or can stand on its own

tunnel: underground passage used by trains and cars

ziggurat: rectangular tiered temple built by ancient Babylonians

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MEGASTRUCTURES

There are some structures so big and breathtaking that it leaves us wondering how they were ever built. This book covers some of those structures – old and modern. The images are informative and the text is simple easy to follow.

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